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**Quality of patient-centred care: medical oncology patients' perceptions and characteristics
associated with quality of care**

Flora Tzelepis,¹ Joseph H Hanna,² Christine L Paul,¹ Allison W Boyes,¹ Mariko L Carey¹

Timothy Regan¹

¹Priority Research Centre for Health Behaviour, University of Newcastle & Hunter Medical
Research Institute, NSW, Australia

²CR&DITSS, Hunter Medical Research Institute, NSW, Australia

Corresponding author

Flora Tzelepis

University of Newcastle

Callaghan NSW 2308

Phone:+61249246275

Fax:+61249246490

E-mail: Flora.Tzelepis@newcastle.edu.au

KEY POINTS

- Comprehensive patient-centred cancer care measures are needed to inform quality improvement efforts
- We examined medical oncology patients' perceptions using the Quality of Patient-Centered Cancer Care measure
- *Respectful communication* had the highest quality care score while *co-ordinated and integrated care* had the lowest.
- Treatment centre attended was associated with: *treatment decision-making; respectful communication; patient preferences and values; and cancer information.*
- Measuring medical oncology patients' experiences is important for prioritising areas for improvement.

Keywords: cancer, oncology, patient-centred care, quality assessment

BACKGROUND

Measuring the quality of patient-centred care in medical oncology units is essential to identifying areas that require improvements.¹ In UK² and Turkish³ studies, medical oncology patients' rated interpersonal and technical aspects of nursing care highly but reported improvements were needed to patient information. Evaluation in diverse treatment centres is valuable because the barriers and areas needing improvement may also be relevant to similar centres nationally or internationally. Furthermore, identifying characteristics associated with patients' perceived care is important for prioritising which patient subgroups may benefit from improved access to services or enhanced support. Evidence has reported that medical oncology patients who were older,⁴ male,^{2, 4} more educated,⁴ and had lower anxiety² perceived receiving higher quality care.

A systematic review found that no patient-centred cancer care measure met all criteria for adequate validity and reliability or addressed all patient-centred care dimensions.⁵ The Quality of Patient-Centered Cancer Care (QPCCC) measure, developed to address this limitation,⁶ has acceptable face validity, content validity, construct validity and internal consistency with haematological cancer survivors.⁶ However, to investigate the transferability of this validated measure its factor structure and internal consistency should be tested with other cancer populations.

This study examined in medical oncology patients:

- 1) the QPCCC measure's factor structure and internal consistency;
- 2) perceptions of which aspects of cancer care were commonly delivered or required improved delivery; and
- 3) patient and treatment centre characteristics associated with perceived quality of patient-centred care.

METHODS

Sample: Three medical oncology treatment centres from Tasmania (centre 1), New South Wales (centre 2), and Victoria (centre 3), Australia that treated ≥ 400 new cancer patients annually participated. Patient eligibility criteria were: confirmed cancer diagnosis; attending outpatient medical oncology unit for second/subsequent appointment; aged ≥ 18 years; physically and mentally capable; and could complete English survey.

Procedure: Between March 2013-June 2014, centre staff identified potentially eligible patients from the clinic list, and a research assistant approached them in the waiting room. Eligible patients who signed a consent form were given a questionnaire assessing demographics, cancer history and psychological distress. Patients completed the questionnaire in the waiting room, unless they preferred to return it later using a reply-paid envelope. After three weeks, another survey was mailed to non-responders. A month after recruitment, patients were mailed a second questionnaire containing the QPCCC measure. Non-responders received reminder surveys after three and six weeks.

The University of Newcastle Human Research Ethics Committee and committees for each treatment centre granted ethical approval.

Measures

Quality of Patient-Centered Cancer Care: The 48-item QPCCC measure examined patients' perceived care across ten factor analytically-derived subscales: *timely care; respectful communication; cancer information; treatment decision-making; treatment delivery; patient preferences and values; equitable care; coordinated and integrated care; emotional support; follow-up care.*⁶ Response options were *Strongly agree, Agree, Disagree, Strongly disagree, and Not applicable to me.* The QPCCC measure's development is described elsewhere.⁶

Other measures: The following characteristics were measured because they have been associated with perceived quality of care in our previous work⁷ and/or existing literature^{2, 4}: age, sex, rurality, marital status, education, employment, private health insurance, cancer type, time since diagnosis, anxiety and depression. The Hospital Anxiety and Depression Scale measured depression and anxiety and subscale scores of ≥ 8 indicated depression or anxiety respectively.

Statistical analysis

Confirmatory factor analysis examined the factor structure and factor loadings > 0.40 were acceptable.⁸ Five respondents per item is the minimum for factor analysis so because the QPCCC subscales contain 46 items, 230 patients were needed. Cronbach's alphas examined internal consistency and were acceptable if between 0.70-0.95.⁹

Percentages and 95% confidence intervals indicated areas of cancer care commonly delivered or not delivered. Means and standard deviations were calculated for QPCCC subscales (1=lowest quality to 4=highest quality). To examine characteristics associated with each QPCCC subscale score, multiple linear regression models were used. Estimates with robust standard errors, and adjusted Wald p-values were calculated.

RESULTS

Of 1,723 potential participants approached, 934 were ineligible. Of 789 eligible patients, 601 (76.2%) consented, 498 (63.1%) returned the first questionnaire and 397 (50.3%) returned the questionnaire containing the QPCCC measure. Mean participant age was 61 years (SD=12), most were female (60.5%), married/living with partner (68.2%), urban residents (58.3%), not employed (73.5%) and had private health insurance (52.6%), while 20.7% were university-educated. Patients were diagnosed with: breast (32.5%), colorectal (21.6%), lung (8.1%), haematological (6.8%),

prostate (3.9%) or other (27.3%) cancers and 32.0% were diagnosed in the last 6 months. Patients attended: centre 1 (37.8%); centre 2 (32.0%); or centre 3 (30.2%).

Factor structure

Nine subscales had all items with factor loadings >0.40 .⁸ However, five items in the *co-ordinated and integrated care* subscale did not: Q35 (factor loading=0.32); Q36 (factor loading=0.30); Q37 (factor loading=0.17); Q38 (factor loading=0.30); and Q41 (factor loading=0.38).⁶ Given these items addressed issues not covered elsewhere and others have classified factor loadings >0.30 as acceptable¹⁰ all items were retained in the *co-ordinated and integrated care* subscale. The root mean square error of approximation estimate was 0.065.

Internal consistency

Cronbach's alphas were: treatment delivery ($\alpha=0.91$); treatment decision-making ($\alpha=0.91$); coordinated and integrated care ($\alpha=0.74$); emotional support ($\alpha=0.81$); timely care ($\alpha=0.94$); follow-up care ($\alpha=0.92$); respectful communication ($\alpha=0.94$); patient preferences and values ($\alpha=0.87$); cancer information ($\alpha=0.85$); equitable care ($\alpha=0.78$) and total scale ($\alpha=0.94$).

Subscale scores

Subscale scores were: respectful communication [mean(SD)=3.6(0.6)]; treatment delivery [mean(SD)=3.4(0.5)]; timely care [mean(SD)=3.2(0.9)]; cancer information [mean(SD)=3.2(0.7)]; treatment decision-making [mean(SD)=3.1(0.6)]; equitable care [mean(SD)=3.1(0.7)]; follow-up care [mean(SD)=3.0(0.6)]; patient preferences and values [mean(SD)=2.9(0.8)]; emotional support [mean(SD)=2.8(0.5)] and co-ordinated and integrated care [mean(SD)=2.5(0.4)].

Cancer care commonly delivered or not delivered

The five areas of care most commonly delivered or not delivered are reported in Tables 1 and 2 respectively.

Characteristics associated with perceived quality of care

No characteristics were associated with *treatment delivery*, *emotional support* or *follow-up care*.

Rural residence ($p=0.02$) and attending centres 2 ($p=0.01$) and 3 ($p=0.002$) compared to 1 were associated with higher perceived quality of *treatment decision-making*. Colorectal cancer patients ($p=0.004$) perceived lower *coordinated and integrated care* than haematological cancer patients. Being male ($p=0.03$) or having breast cancer ($p=0.01$), compared to haematological cancer were associated with lower perceived *timely care*. Being depressed ($p=0.002$) and attending centre 2 ($p=0.004$) compared to 1 was associated with lower perceived *respectful communication*. Private health insurance ($p=0.005$) and attending centre 3 ($p<0.001$) compared to 1 were associated with lower perceived quality regarding *patient preferences and values*. Attending centre 3 ($p=0.045$) compared to 1, was associated with higher perceived quality of *cancer information*. Private health insurance ($p=0.04$) was associated with perceived lower *equitable care*. Prostate cancer patients ($p=0.02$) perceived higher *equitable care* than haematological cancer patients.

CONCLUSIONS

The QPCCC measure had reasonable factor structure⁸ and acceptable internal consistency⁹ with medical oncology patients. Medical oncology patients most commonly perceived that *respectful communication* was delivered. The four items perceived most frequently by medical oncology patients as delivered were identical to those previously reported by haematological cancer survivors.⁷ Patients most commonly perceived that doctors had not explained they could get a second medical opinion if they wished. Clinicians should communicate areas of uncertainty in treatment options and ensure patients are aware they can seek a second opinion. Furthermore, treatment centre attended was associated with the most QPCCC subscales. Additional

communication skills training or reminders/checklists in healthcare systems may reduce centre variation and facilitate consistent, high-quality patient-centred care.

Study limitations included that our sample's representativeness is unknown because non-responders' characteristics were not collected and we are unaware of data describing the characteristics of all Australian medical oncology patients. The generalisability of findings to all Australian medical oncology treatment centres may be limited. Additionally, >50% were diagnosed with breast or colorectal cancer, so results may be less generalisable to less common cancers.

Assessment of patient-centred care is crucial to understanding patients' experiences and prioritising areas for improvement. Longitudinal studies are needed to determine whether patient experiences change over time and which patient characteristics predict perceived quality of patient-centred cancer care.

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Table 1: Care most commonly delivered

	Strongly agree/agree		Subscale
	n	%(95%CIs)	
Hospital staff showed respect for me	377	96.4(94.6-98.3)	Respectful communication
Hospital staff made sure I received the correct treatment	377	96.4(94.6-98.3)	Treatment delivery
Hospital staff talked to me in a way I could understand	371	95.1(93.0-97.3)	Respectful communication
Hospital staff showed respect for my family/friends	362	92.6(90.0-95.2)	Respectful communication
During treatment hospital staff made sure I did not receive unnecessary tests or treatments	359	91.8(89.1-94.5)	Treatment delivery

Table 2: Care most commonly not delivered

	Strongly disagree/disagree		Subscale
	n	%(95% CIs)	
Doctors at hospital explained I could get a second medical opinion if I wanted to	148	38.9(34.0-43.9)	Treatment decision-making
Hospital staff helped me find other cancer patients I could talk to about their cancer experiences	136	36.1(31.2-40.9)	Coordinated and integrated care
Hospital staff helped my family/friends find others in a similar situation to talk to	125	32.7(28.0-37.4)	Coordinated and integrated care
During my treatment, I was able to choose which doctor I saw for each appointment	116	30.1(25.5-34.6)	Patient preferences and values
Doctors at hospital explained how each treatment option might affect my length of life	110	28.5(24.0-33.0)	Treatment decision-making

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